

Docket No. 740756-2657
Application No. 10/699,668
Page 2

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently Amended) A semiconductor device comprising:
a substrate;
a first insulating film provided over said substrate;
a second insulating film provided over said first insulating film;
a semiconductor film provided over said second insulating film;
a source region and a drain region provided in said semiconductor film;
a channel region provided in said semiconductor film between said source region and said drain region; and
a gate electrode provided over said channel region with a gate insulating film therebetween,
wherein an impurity concentration of boron in an interface between said first insulating film and said second insulating film is higher than an impurity concentration of boron in an interface between said second insulating film and said channel region.
2. (Previously Presented) A semiconductor device according to claim 1 wherein said semiconductor device is incorporated into one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a cellular phone, and an electronic book.
3. (Previously Presented) A semiconductor device according to claim 1 wherein said semiconductor film comprises a material selected from the group consisting of silicon, germanium and Si_xGe_{1-x} where $0 < x < 1$.
4. (Currently Amended) A semiconductor device according to claim 1 wherein said semiconductor film comprises a crystalline semiconductor film.

W717853.1

Docket No. 740756-2657
Application No. 10/699,668
Page 3

5. (Previously Presented) A semiconductor device according to claim 1 wherein said substrate is selected from the group consisting of an insulating substrate, a ceramic substrate, a stainless steel substrate, a metal substrate, a semiconductor substrate and a plastic substrate.

6. (Previously Presented) A semiconductor device according to claim 1 wherein said gate insulating film comprises an organic resin having benzocyclobutene (BCB).

7. (Currently Amended) A semiconductor device comprising:
a substrate;
a first insulating film provided over said substrate;
a second insulating film provided over said first insulating film;
a semiconductor film provided over said second insulating film;
a channel region provided in said semiconductor film; and
a gate electrode provided over said channel region with a gate insulating film therebetween,

wherein an ~~impurity~~ concentration of boron in an interface between said first insulating film and said second insulating film is higher than an ~~impurity~~ concentration of boron in an interface between said second insulating film and said channel region.

8. (Previously Presented) A semiconductor device according to claim 7 wherein said semiconductor device is incorporated into one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a cellular phone, and an electronic book.

9. (Previously Presented) A semiconductor device according to claim 7 wherein said semiconductor film comprises a material selected from the group consisting of silicon, germanium and Si_xGe_{1-x} where $0 < x < 1$.

10. (Currently Amended) A semiconductor device according to claim 7 wherein said semiconductor film comprises a crystalline semiconductor film.

W717853.1

Docket No. 740756-2657
Application No. 10/699,668
Page 4

11. (Previously Presented) A semiconductor device according to claim 7 wherein said substrate is selected from the group consisting of an insulating substrate, a ceramic substrate, a stainless steel substrate, a metal substrate, a semiconductor substrate and a plastic substrate.

12. (Previously Presented) A semiconductor device according to claim 7 wherein said gate insulating film comprises an organic resin having benzocyclobutene (BCB).

13. (Previously Presented) A semiconductor device according to claim 1 wherein said second insulating film comprises a material selected from the group consisting of silicon nitride, silicon oxynitride and silicon oxide.

14. (Previously Presented) A semiconductor device according to claim 1 wherein said first insulating film comprises a material selected from the group consisting of silicon nitride, silicon oxynitride and silicon oxide.

15. (Previously Presented) A semiconductor device according to claim 7 wherein said second insulating film comprises a material selected from the group consisting of silicon nitride, silicon oxynitride and silicon oxide.

16. (Previously Presented) A semiconductor device according to claim 7 wherein said first insulating film comprises a material selected from the group consisting of silicon nitride, silicon oxynitride and silicon oxide.

17. (Currently Amended) A semiconductor device comprising:
a substrate;
a first insulating film provided over said substrate;
a second insulating film provided over said first insulating film;
a semiconductor film provided over said second insulating film;
a channel region provided in said semiconductor film; and
a gate electrode provided over said channel region with a gate insulating film

W717853.1

Docket No. 740756-2657
Application No. 10/699,668
Page 5

therebetween,

wherein an impurity concentration of boron in an interface between said first insulating film and said second insulating film is higher than an impurity concentration of boron in an interface between said second insulating film and said channel region, and

wherein said second insulating film is thinner than said first insulating film.

18. (Previously Presented) A semiconductor device according to claim 17 wherein said semiconductor device is incorporated into one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a cellular phone, and an electronic book.

19. (Previously Presented) A semiconductor device according to claim 17 wherein said semiconductor film comprises a material selected from the group consisting of silicon, germanium and Si_xGe_{1-x} where $0 < x < 1$.

20. (Currently Amended) A semiconductor device according to claim 17 wherein said semiconductor film comprises a crystalline semiconductor film.

21. (Previously Presented) A semiconductor device according to claim 17 wherein said substrate is selected from the group consisting of an insulating substrate, a ceramic substrate, a stainless steel substrate, a metal substrate, a semiconductor substrate and a plastic substrate.

22. (Previously Presented) A semiconductor device according to claim 17 wherein said gate insulating film comprises an organic resin having benzocyclobutene (BCB).

23. (Previously Presented) A semiconductor device according to claim 17 wherein said second insulating film comprises a material selected from the group consisting of silicon nitride, silicon oxynitride and silicon oxide.

24. (Previously Presented) A semiconductor device according to claim 17 wherein

W717853.1

Docket No. 740756-2657
Application No. 10/699,668
Page 6

said first insulating film comprises a material selected from the group consisting of silicon nitride, silicon oxynitride and silicon oxide.

25. (Previously Presented) A semiconductor device according to claim 1 wherein said first insulating film has a film thickness of from 100 to 500 nm.

26. (Previously Presented) A semiconductor device according to claim 1 wherein said second insulating film has a film thickness of from 10 to 100 nm.

27. (Previously Presented) A semiconductor device according to claim 7 wherein said first insulating film has a film thickness of from 100 to 500 nm.

28. (Previously Presented) A semiconductor device according to claim 7 wherein said second insulating film has a film thickness of from 10 to 100 nm.

29. (Previously Presented) A semiconductor device according to claim 17 wherein said first insulating film has a film thickness of from 100 to 500 nm.

30. (Previously Presented) A semiconductor device according to claim 17 wherein said second insulating film has a film thickness of from 10 to 100 nm.

31-33. (Canceled)

34. (New) A semiconductor device according to claim 1, wherein the concentration of boron in an interface between said first insulating film and said second insulating film is 3×10^{17} atoms/cm³ at maximum.

35. (New) A semiconductor device according to claim 7, wherein the concentration of boron in an interface between said first insulating film and said second insulating film is 3×10^{17} atoms/cm³ at maximum.

W717853.1

Docket No. 740756-2657
Application No. 10/699,668
Page 7

36. (New) A semiconductor device according to claim 17, wherein the concentration of boron in an interface between said first insulating film and said second insulating film is 3×10^{17} atoms/cm³ at maximum.

W717853.1